



SBIR/STTR SUCCESS

MBF's powerful 3D brain mapping tool NeuroLucida allows researchers to map the distribution of a particular cell type in brain tissue or to examine the location of a network of traced neurons in a brain region.

MBF BIOSCIENCE

Before the development of a ubiquitous treatment for Alzheimer's and autism can happen, researchers must understand the mechanisms for these major neuropsychiatric disorders. That is where MBF Bioscience comes in, with its focus on creating tools for researchers to answer complex research questions to assist in better understanding serious diseases.

PHASE III SUCCESS

\$150 million in revenue stemming from SBIR-funded technologies; international exports to University researchers account for 35% of annual sales

AGENCIES

HHS, NSF

SNAPSHOT

Vermont-based MBF Bioscience sells to customers around the globe and the company has a mission to create innovative tools for researchers that will help to develop novel treatments for serious neurological disorders.

MBF BIOSCIENCE

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"We create the tools that scientists need to understand the microscopic nature of diseases," explains Jack Glaser, President and Co-Founder of MBF Bioscience. "The causes are often microscopic in nature; there can be small changes to neurons, and it can come down to certain genes being present or not present. We fit in at the beginning of the pipeline, where researchers are trying to understand the problem and the underlying mechanisms of the disease so they can develop treatments."

For a company that exports to researchers around the globe, it is hard to imagine the humble beginnings of a two-person father and son team, but such was the case during the advent of the personal computer. Glaser, who was a computer scientist, teamed with his father, who was a neuroscientist and professor at the University of Maryland. After hooking up a personal computer to a microscope, the two men realized there was a huge potential to analyze neurons through specialized software. They soon envisioned themselves creating software that would be useful to multiple types of research labs, and that it would be affordable for neuroscientists to set up a system to perform the analysis. Although it started as a hobby in the 80s, Glaser and his father soon took the next step and launched MBF Bioscience.

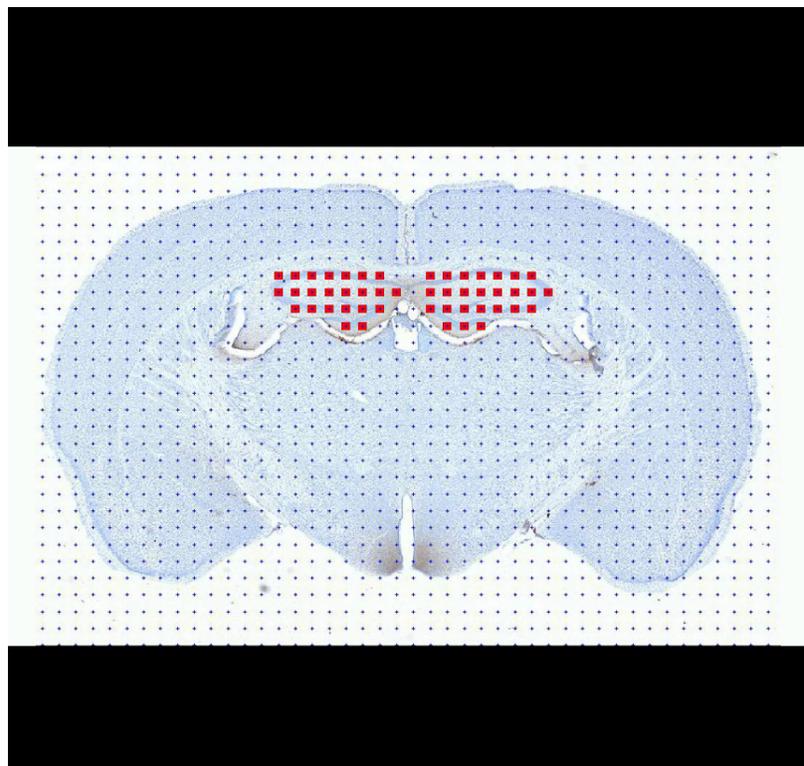
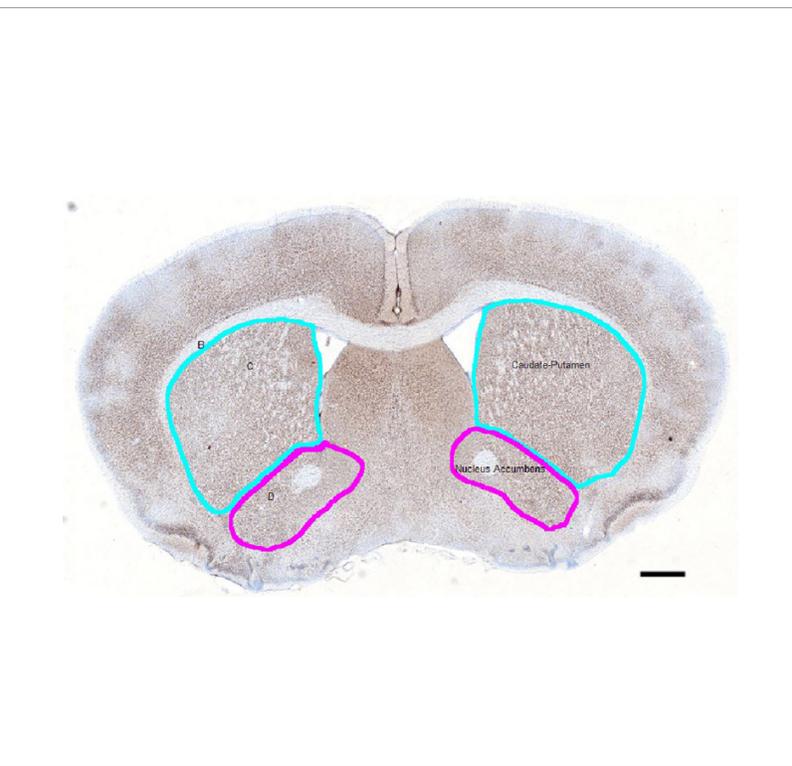
The first hurdle was figuring out how to balance the high costs of creating this software with the need to bring on more employees with the desired expertise. Glaser's father was the first to hear of the Small Business Innovation Research (SBIR) program and the team decided to respond to a solicitation from the National Institutes of Health (NIH).

"We said the only way this company can get off the ground is if I can focus on writing the software, and if we can hire another programmer to get it launched," reflected Glaser. "So we wrote an SBIR application, to commercialize this research that we had been working on for five years. We got a Phase I from the National Institute of Mental Health (NIMH) which was all we needed – we were able to hire the programmer and after just one year, we were ready to launch."

From that starting point, MBF enjoyed steady and organic growth. The company's bread and butter product – NeuroLucida – is the most advanced system for neuron tracing and reconstruction, neuron analysis, and 3D brain mapping in the world. As a one-product company at the time, the team spent years refining NeuroLucida to meet the needs of researchers around the world. When a similar opportunity arose in the field of unbiased stereology, MBF used the opportunity to branch out into supplemental areas of neurological research.

Unbiased stereology is widely recognized in biological research as the best-practice method for quantitative histology. It is used to accurately quantify the number of cells, the length of fibers, and the area and volume of biological structures or regions. It is important, for instance, if a researcher is examining how big a lesion or injury is in the brain. Or maybe a scientist wants to assess the difference in the number of brain cells in a particular region of the brain of an older individual vs. a younger one. Once again, the company turned to NIMH for a grant that would allow the team to create a new software system for its stereology product suite. Today, MBF provides its clients with a host of stereological support that includes detailed software workflows within Stereo Investigator – the patented microscope and computer used in the process, contract research services, extensive on-line documentation, videos and webinars.

“That is the important component of SBIR – if an application has merit, does it have the potential to be an economic success, and will it have a big impact on research?” adds Glaser. “We made a great case on research, but the economics were in question. As it turned out, it made a huge impact on both. Our sales doubled with this new product. We now have a worldwide penetration in research labs, and the SBIR program really helped us to launch our global presence.”



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Today, MBF employs 40 people in the state of Vermont, and focuses on employee satisfaction and retention. Many of the original employees are still with the company, and MBF was recognized in 2010 as one of Vermont's Best Places to Work. The company has also utilized the Vermont EPSCoR Phase 0 SBIR program to help move projects along to a point where the team can write Phase I grant applications. They have also used State of Vermont support for marketing efforts and to attend a trade show in Rio de Janeiro, Brazil, where they have a customer base.

As for the future, MBF is immersed in analyzing *C. elegans* (worms), which are now being used for toxicology and genetics testing. Proven to provide better data than mice, the company received a grant from the National Institute of Environmental Health Sciences (NIEHS) to further its development.